1. A composition for the detection of one or more target entities in a mixture, said composition comprising non-magnetic microparticles or beads operably linked with a first binding partner capable of binding to a complementary second binding partner, said second binding partner being operably linked to magnetic particles smaller than the average size of said non-magnetic microparticles, thereby to form a layer of magnetic particles on said non-magnetic microparticles, wherein said magnetic particles bear variable amounts of free binding sites distal to the surface of said non-magnetic microparticles and wherein the bound magnetic particles are capable of binding both a labeled first binding partner and said first binding partner either in its free form or operably linked to one or more entities including entities for capturing said target entities in the mixture.

2. The composition of claim 1 wherein said non-magnetic microparticles are unlabeled.

3. The composition of claim 1 wherein said non-magnetic microparticles are detectably labeled.

4. The composition of claim 1 wherein said first binding partner is a biotin species.

5. The composition of claim 1 wherein said complementary second binding partner is an avidin species.

6. The composition of claim 1, wherein said free binding sites on said layer of magnetic particles are capable of directly or indirectly binding at least three additional entities.

7. The composition of claim 6 wherein said additional entities are selected from the group consisting of: a) one or more target specific third binding partners operably linked to said first binding partner; b) one or more detectable labels linked to first binding partner, c) a biotin species with affinity for blocking residual binding sites on

the second binding partner located on the magnetic microparticles; and d) one or more detectably labeled target specific fourth binding partners which are capable of binding one or more epitopes on bound target entities.

8. The composition of claim 7 wherein said third binding partner is an oligonucleotide probe operably linked to said first binding partner and wherein said probe is complementary to a target oligonucleotide sequence.

9. The composition of claim 7 wherein said third binding partner is an antibody.

10. The composition of claim 7 wherein said fourth binding partner is a target specific binder capable of recognizing epitopes on target entities different from those recognized by said third binding partner.

11. The composition of claim 7, wherein the detectable label is a fluorescent compound.

12. A method for the detection of one or more target entities in a mixture, which method comprises the steps of adding the composition of claim 1 to the mixture, incubating the mixture, separating the components of the mixture by magnetic means, and detecting one or more of the target entities in the mixture.

13. The method of claim 12, wherein said entities are selected from the group of particulate analytes and non-particulate analytes.

14. A kit for the detection of one or more target entities in a mixture, which kit comprises the composition of claim 1, an incubation means, a magnetic separation means, and a detection means.

15. A composition useful in the calibration of a diagnostic instrument system which utilizes fluorescent detection, said composition comprising magnetic particles bound

to particles having a detectable fluorescent label, said magnetic particles having an average size less than that of the particles having a detectable fluorescent label.

16. The composition of claim 15, wherein the magnetic particles have an average size of less than 0.2 um.

17. The composition of claim 15, wherein the particles having a detectable fluorescent label have an average size of from about 1 to about 20 um.